WHAT IS CLAIMED IS:

1.   A coding and decoding apparatus wherein the coding side transmits coded data together with identifying information for identifying the means of decoding the coded data, and the decoding side is capable of storing a plurality of decoding schemes so as to perform decoding based on one of the previously stored schemes, in order that the coded data and the information of the tools which constitute the algorithm as the means of decoding the coded data can simultaneously be transmitted, the received tools can be reconstructed into the algorithm and the received coded data can be decoded based on the algorithm,
said coding and decoding apparatus comprising:

a tool storage means for storing tools;

a tool-correspondent information storing means for storing the information corresponding to the tools;

a comparing means for comparing the tool-correspondent information received with the information stored in said tool-correspondent information storing means; and

a selection controlling means for selecting the optimal tool from said tool storage means based on the result from said comparing means to perform the processing with the selected one,

characterized in that the coded data, tool information, tool-correspondent information are all transmitted

simultaneously, and the coded data is decoded using the tool selected based on the received tool-correspondent information.

2. A coding and decoding apparatus according to Claim 1, wherein the tool-correspondent information comprises the processing capacity of each tool, and the processing capacity of the received tool is compared to a decoding capacity stored in said tool-correspondent information storing means so that the tools whose capacities fall within the range of the decoding capacity are selected.

3. A coding and decoding apparatus according to Claim 2, wherein the processing capacity of the tool is numerically represented and transmitted.

4. A coding and decoding apparatus according to Claim 2, wherein said tool-correspondent information storing means includes a decoding capacity storage section for setting up a decoding capacity of the decoding apparatus and storing it and a coding capacity storage section for storing each of coding capacities of the tools transmitted from the coding apparatus, and said comparing means comprises a capacity comparator which compares the coding capacity with the decoding capacity so as to judge whether the transmitted tool is processible.

5. A coding and decoding apparatus according to Claim 1, wherein the tool-correspondent information comprises keys

unique to different tools, and received keys are compared to the keys stored in said tool-correspondent storing means so as to select the corresponding tools and operate the selected tools.

5   6. A coding and decoding apparatus according to Claim 1, further comprising a response controlling means for requesting the coding apparatus on the opposite side to transmit the tool information only when tool information is required.

10   7. A coding and decoding apparatus wherein the coding side transmits coded data together with identifying information for identifying the means of decoding the coded data, and the decoding side is capable of storing a plurality of decoding schemes so as to perform decoding based on one of

15   the previously stored schemes,

said apparatus being characterized in that n-ranked (n: a positive integer) coded data which is produced using an n-ranked coding tool and decoded using an n-ranked decoding tool has a hierarchical structure which includes

20   (n+1)-ranked coded data which is produced using a (n+1)-ranked coding tool and decoded using a (n+1)-ranked decoding tool,

the coding side having an n-ranked coding tool is composed of: a coding means which produces the n-ranked coded data

25   using the n-ranked coding tool; and an identifier adding

means which attaches N-ranked identifiers (N: a positive integer satisfying $N \geq n$) to N-ranked coded data which is included in the n-ranked coded data but is other than (N+1)-ranked coded data included in the N-ranked coded data, and

the decoding side having an m-ranked (m is a positive integer satisfying $m > n$) decoding tool is composed of: a data reconstructing means which extracts the N-ranked coded data which is attached with the N-ranked identifiers where $N \geq m$, from the n-ranked coded data; and a decoding means which decodes the m-ranked decoded data using the m-th decoding tool.

8.   A coding and decoding apparatus according to Claim 7, wherein said coding tool is an inter-frame predictive coding tool and said decoding tool is an inter-frame predictive decoding tool.

9.   A coding and decoding apparatus wherein the coding side transmits coded data together with identifying information for identifying the means of decoding the coded data, and the decoding side is capable of storing a plurality of decoding schemes so as to perform decoding based on one of the previously stored schemes,

said coding and decoding apparatus being characterized in that when the coded data and the coding information which includes a decoding scheme as the means of decoding the

coded data and functional tools constituting the decoding scheme are simultaneously transmitted, the decoding side receives the coding information and reconstructs the decoding scheme based on the coding information received,

5 and the received coded data is decoded based on the reconstructed decoding scheme, an identification code of a previously defined basic decoding scheme and the differential information from the basic decoding scheme are transmitted as the coding information from the coding side

10 so that the decoding side will recognize the decoding scheme required therefor.

10. A coding and decoding apparatus according to Claim 9, wherein the coding apparatus comprises: a database of coding schemes for storing plural kinds of coding schemes and

15 functional tools which constitute the coding schemes; a coding scheme selector for selecting the coding scheme based on input data; a coding section for performing a coding process of the input data in conformity with the determined coding scheme; and a coding controller for controlling each

20 section.

11. A coding and decoding apparatus according to Claim 9, wherein the decoding apparatus comprises: a database of decoding schemes for storing plural kinds of decoding schemes and functional tools which constitute the decoding

25 schemes; a decoding scheme constructing section for

reconstructing the decoding scheme in accordance with the received coding information; a decoding section for performing a decoding process of the received data in conformity with the reconstructed decoding scheme; and a

5   decoding controller for controlling each section.

12. A coding and decoding apparatus according to Claims 9 through 11, wherein the identification code of a basic decoding scheme and the information that one or some kinds of functional tools will be added to the basic decoding

10   scheme, are transmitted as the coding information, so that the decoding scheme incorporated in the decoding apparatus can be expanded for use.

13. A coding and decoding apparatus according to Claims 9 through 11, wherein the identification code of a basic

15   decoding scheme and the information that one or some kinds of functional tools will not be used, are transmitted as the coding information so that the decoding scheme incorporated in the decoding apparatus can be simplified for use.

14. A coding and decoding apparatus according to Claims 9

20   through 11, wherein the identification code of a basic decoding scheme and the information that one or some kinds of functional tools will be replaced with another or others, are transmitted as the coding information so that the decoding scheme incorporated in the decoding apparatus can

25   be modified for use.

15. A coding and decoding apparatus according to Claims 9 and 10, wherein when the coding information is transmitted, if there are a number of combinations of selectable coding information, the combination which minimizes the transmitted amount of information will be selected for transmission.

16. A coding and decoding apparatus wherein the coding side transmits coded data together with identifying information for identifying the means of decoding the coded data, and the decoding side is capable of storing a plurality of decoding schemes so as to perform decoding based on one of the previously stored schemes,

said coding and decoding apparatus being characterized in that: before transmitting the coded data to the decoding apparatus, the coding apparatus transmits the tools constituting an algorithm as the means of decoding the coded data, and the decoding apparatus reconstructs the algorithm using the tools so as to decode the received coded data based on the algorithm and stores the tools therein; when the decoding apparatus receives the coded data which has been coded by the same tools, the decoding apparatus decodes the coded data using the tools previously stored and the tools are defined in a hierarchical manner so that in place of a tool for a certain rank, the higher-ranked tool can be used to secure the minimum quality of the operation; and the coding apparatus on the transmitting side simultaneously

transmits the decoding tool information and the coded data if the decoding apparatus on the receiving side has not decoding tool requested by the transmitting side.

17. A coding and decoding apparatus according to Claim 16, wherein when the decoding apparatus on the receiving side has no decoding tool requested by the coding apparatus on the transmitting side, the transmitting side temporarily changes the coding scheme using the coding tool that is in conformity with the decoding tool present on the receiving side.

18. A coding and decoding apparatus according to Claim 16, wherein when the decoding apparatus on the receiving side has no decoding tool requested by the coding apparatus on the transmitting side, the receiving side, whilst downloading the decoded tool transmitted from the transmitting side to construct the requested decoding tool, temporarily decodes the coded data using a substitutable higher-ranked tool which is lowered in quality but still is able to perform decoding.

19. A coding and decoding apparatus according to Claim 18, wherein after the decoding tool requested has become prepared, the receiving side starts the decode operation using the requested decoding tool.